

## BOOK AND LITERATURE REVIEWS

Barthlott, W., Porembski, S., Seine, R. & Theisen, I. 2004. *Karnivoren*, Ulmer, Stuttgart. 224 pp., text in German, 160 figs., many colour photographs, ISBN 3-8001-4144-2.

This is the first comprehensive book on carnivorous plants for readers with both a horticultural and scientific interest written by German authors. Chapters include habitats, biogeography and diversity, attraction and capture, digestion and utilization, prey, commensals, non-carnivorous plants capturing animals, evolution, cultivation, conservation, the individual families of carnivorous plants, bryophytes capturing animals, fungi capturing animals, alphabetical listing of carnivorous plants, glossary, literature, index, sources and societies. In general the book can be recommended to all German reading carnivorous plant enthusiasts, as it contains a good amount of interesting facts, views, and pictures, some of which not published before. Even apart from the text the book is worth a look for the photographs alone, some of which are really artistic. In one detail I do not agree with the authors who chose to call plants that capture and kill animals but that do not digest them "Praekarnivoren" (pre-carnivores). This term is not fortunate because it insinuates the predictability of a future evolutionary development, which would contradict the premises of evolutionary theory, and so far it still has to be proven if borderline cases like *Roridula* and some *Heliamphora* species are not in fact post-carnivorous. "Sub-carnivores" would have been a less problematic and more appropriate term. (JS)

Švarc, D. 2003 *Masožravé rostliny*, Sursum, Tišnov 184 pp., text in Czech, 251 colour photographs, many b/w line drawings, ISBN 80-7323-035-6.

Again a book from the remarkably active Czech carnivorous plant community. It can be recommended to cultivators (reading Czech) and to nature lovers and carnivorous plant book collectors for the many photographs. The reproduction quality of most pictures roughly corresponds to the comparatively low price of the book. The drawings are in a few cases a bit too "generic" to be of great use in identifying species. Some bromeliad species are treated as "experimentally proven" carnivores, while the cited experiments did in fact only show (endogenous) digestive enzymes to be lacking in their traps. (JS)

What is the closest non-carnivorous relative of Lentibulariaceae? Three publications finding more than four answers:

Jobson, R., Playford, J., Cameron, K.M. & Albert, V.A. 2003. Molecular Phylogenetics of Lentibulariaceae Inferred from Plastid *rps16* Intron and *trnL-F* DNA Sequences: Implications for Character Evolution and Biogeography. *Syst. Bot.* 28: 157-171.

Müller, K., Borsch, T., Legendre, L., Porembski, S., Theisen, I. & Barthlott, W. 2004. Evolution of Carnivory in Lentibulariaceae and the Lamiales. *Plant Biol.* 6: 477-490.

Rahmanzadeh, R., Müller, K., Fischer, E., Bartels, D. & Borsch, T. 2005. The Linderniaceae and Gratiolaceae are Further Lineages Distinct from the Scrophulariaceae (Lamiales). *Plant Biol.* 7: 67-78.

While Jobson *et al.* (2003) is satisfied to place Lentibulariaceae as sister to a not well resolved Scrophulariales (Lamiales) containing *Antirrhinum*, *Linaria*, *Melampyrum*, *Digitalis*, *Veronica* (NB: all these genera are placed by the authors in "Scrophulariaceae", to which neither of them must belong if the family should exclude Lamiaceae), Gesneriaceae, Pedaliaceae, Acanthaceae, and Byblidaceae, Müller *et al.* (2004) offers a series of theories, depending on the method by which sequence homology is translated into a phylogenetic hypothesis: either Bignoniaceae (*Campsis* & *Kigelia* investigated for the *matK-trnK* sequences) or Lamiaceae (*Lamium*) appear as the closest Lentibulariaceae relative. None of the other carnivorous or sub-carnivorous members of

Scrophulariales (Byblidaceae and Martyniaceae) is closer to Lentibulariaceae. Although Rahmanzadeh *et al.* (2005) pretends to focus on different lineages, a substantial portion of the phylogenetic trees is comprised of Lentibulariaceae, and—much to our surprise—yet another hypothesis is offered (based on the same *matK-trnK* sequences): Acanthaceae (*Dipteracanthus*, *Thubergia*, and *Avicemia*) as the closest Lentibulariaceae relative, followed by Martyniaceae (!). In a different analysis the already mentioned Bignoniaceae appear nearest to Lentibulariaceae again. Are we approaching a definitive solution yet? (JS)

Kameyama, Y., Toyama, M. & Ohara, M. (2005) Hybrid Origins and F<sub>1</sub> Dominance in the Free-Floating, Sterile Bladderwort, *Utricularia australis* f. *australis* (Lentibulariaceae). *Am. J. Bot.* 92: 469-476.

Using experimental crosses in cultivation, AFLP analysis, and chloroplast (*trnT-trnL* and *trnQ-trnS*) gene sequence comparison, the authors demonstrate that the widespread sterile *Utricularia australis* (forma *australis*) is derived from a hybrid between the two fertile taxa *U. macrorhiza* and what the authors prefer to call *U. australis* f. *temicualis*. If *U. macrorhiza* is, however, considered specifically distinct from *U. australis*, the hybrid (or hybrid-derived taxon) must not be classified as an infraspecific entity of one of the parents (according to ICBN Art. H.5.1, the appropriate rank of a nothotaxon is that of the postulated or known parent taxa). Thus, it would be preferable to call the other parent *U. temicualis* (the name is validly published but has just been treated as a synonym of *U. australis* in the past). The hybrid status of *U. australis* is not so surprising (it is sterile and shows hybrid vigour), the unusual part are the parents and their distribution. *U. temicualis* is apparently confined to Japan, *U. macrorhiza* is widespread in North America (and rare in E Asia), while both are missing in most of the vast range (Old World except deserts) of *U. australis*, a situation somewhat similar to the other widespread hybridogenetic taxon of carnivorous plants, viz. *Drosera anglica*, which is far more widespread than one of its parents, *D. linearis*. (JS)

Cheek, M., Jebb, M., Lee, C., Lamb, A. & Phillipps, A. 2003. *Nepenthes hurrelliana* (Nepenthaceae), a New Species of Pitcher Plant from Borneo. *Sabah Parks Nature J.* 6: 117-124.

The authors write “the appearance of this plant is overwhelmingly like that of a hybrid between these two species (rev. note: *N. veitchii* and *N. fusca*), which may in fact, be its origin.” Nevertheless, the authors prefer not to treat it as a nothotaxon because it occurs in places where the parents have not been found. For other hybridogenetic carnivorous taxa occurring outside the range of one or both of their parents cf. review above. (JS)

## Forget anything?

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